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URBAN AND REGIONAL LAND USE ANALYSIS:
CARETS AND CENSUS CITIES EXPERIMENT PACKAGE

(E75-10019) URBAN AND REGIONAL LAND USE ANALYSIS: CARETS AND CENSUS CITIES EXPERIMENT PACKAGE Monthly Progress Report, Jul. - Aug. (Geological Survey, Reston, Va.) 4 p HC \$3.25 CSCL 08B G3/43 00019 N75-12398 Unclas

SKYLAB/EREP INVESTIGATION NO. 469
NASA Order No. T-5290 B

MONTHLY PROGRESS REPORT

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Harry F. Lins, Jr.
U.S. Geological Survey
Geography Program
Reston, Virginia 22092
July-August, 1974
August 20, 1974



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OFFICE OF THE DIRECTOR

October 24, 1974

NASA Scientific and Technical
Information Facility, Code KS
Washington, D.C. 20546

Mark for: T-5290B

Dear Sir:

Enclosed is one copy each of the Monthly Progress Reports
for Skylab EREP Investigation 469, dated Aug. 20 and
Sept. 20, 1974, prepared under NASA order T-5290B and
sent to you as specified by that order.

Sincerely yours,

Priscilla W. Woll
Technical Publications Editor
EROS Program

Enclosure

URBAN AND REGIONAL LAND USE ANALYSIS:
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Monthly Progress Report: July-August, 1974; August 20, 1974
Investigation No. 469

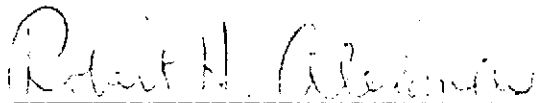
- a. Overall status, including problem areas and significant progress to date:
 - a.1. CARETS -- Land use analysis: During the months of July and August the focus of the Skylab research was the completion of the special report requested by NASA/JSC and the preparation and presentation of a Skylab related paper at the International Society of Photogrammetry's Commission I Symposium on Primary Data Acquisition in Stockholm, Sweden. In research aimed at determining and demonstrating the use of the S-190 B Earth Terrain Camera to detect land use patterns, changes, and associated environmental impact and to compare the S-190 B with other remote sensing data sources, the land use of portions of Fairfax County, Virginia was mapped using data from Skylab, ERTS, and high-altitude aircraft photography. A Skylab Level III land use map of Fairfax City was compared to a field checked aircraft generated land use map. Using a systematic aligned sampling strategy an accuracy level of 83 percent was completed for the Skylab map with 42 percent of the error attributed to the misclassification of unimproved open space, probably resulting from limitations in film spectral resolution and camera spatial resolution. In the same comparison, 130 hectares of wooded residential land were found to be misclassified as forest on the Skylab map. In a Level I comparison of ERTS and Skylab derived land use maps to high-altitude photographic data, the accuracy of the Skylab data was found to be 88 percent, with the error evenly distributed among urban, agriculture, and forest categories. The ERTS interpretation was found to have only a 65 percent accuracy.
 - a.2. CARETS -- Land use climatology: No change; awaiting S-192 data products
 - a.3. Census Cities: No change.
- b. Recommendations concerning decision and/or actions required to ensure the attainment of the experiment's scientific objectives:
No change.
- c. Expected accomplishments during the next report periods:
 - 1) Begin work on the CARETS - Land Use Analysis section of the Skylab Final Report.
 - 2) Continue metropolitan land use analysis and change detection of EREP data in the Census Cities investigation.
 - 3) Solicit responses from users on the applicability of Skylab data to state and local land use planning problems.
- d. Significant results and their relationship to practical applications or operational problems: The most significant finding to date has

been the ability of S-190 B data to produce land use maps not far removed from the quality of high-altitude aircraft photography generated maps. Further details and examples are contained in the report just completed "Selected Applications of Skylab High-Resolution Photography to Urban Area Land Use Analysis" by Robert H. Alexander and Harry F. Lins, Jr.

e. Summary outlook for the remaining effort to be performed: No change.

f. Travel summary and plans: From August 27 to 29 Harry Lins participated in the International Society of Photogrammetry's Commission I Symposium on Primary Data Acquisition. The meetings, held in Stockholm, Sweden, primarily dealt with sensor capabilities and geometric properties. Lins chaired the session on remote sensing and presented the findings obtained during the special study requested by NASA/Jsc.

Approved:



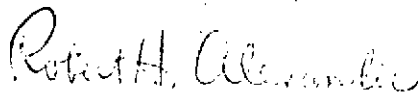
Robert H. Alexander
Principal Investigator
Skylab/EREP Investigation No. 469

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Monthly Progress Report: September, 1974
Investigation No. 469

- a. Overall status, including problem areas and significant progress to date:
 - a.1. CARETS -- Land Use Analysis: No change
 - a.2. CARETS -- Land Use Climatology: No change; awaiting S-192 data products.
 - a.3. Census Cities: Since the last reporting period members of the Census Cities team have re-scheduled their tasks to the completion of the project in light of data actually received. They now feel that they should complete their investigations of six urban test sites, and section of the final report by June, 1975. Photo enlargements are currently on order for use as interpretation bases and all projected tasks have been outlined and assigned to project personnel. Five urbanized area sites (New Haven, Pontiac, Washington, Phoenix and Cedar Rapids) will be analyzed in Washington using Skylab 3, S190B photos, except for Cedar Rapids, the study of which will utilize the Skylab 4, S190B high-resolution CIR photography. The San Francisco site will be analyzed by USGS personnel in Menlo Park, California, using Skylab 4, S190B imagery.
- b. Recommendations concerning decision and/or actions required to ensure the attainment of the experiment's scientific objectives:
No change
- c. Expected accomplishments during the next report periods:
No change
- d. Significant results and their relationship to practical applications or operational problems: No change
- e. Summary outlook for the remaining effort to be performed:
No change
- f. Travel summary and plans: None

Approved:



Robert H. Alexander
Principal Investigator
Skylab/EREP Investigation No. 469